•Problem: Out of Rubbing Alcohol, Peroxide, Lemon Juice, and Vinegar what cleans corroded pennies the best?

•Introduction: I have always hated seeing corroded coins, so I wanted to see what cleans them. I went through my piggy bank and found corroded pennies. Then I went online to find different opinions about cleaning corrosion.

•Background Information (3 Sources cited on Work Cited Page)

-Corrosion: Due to chemical reactions wearing away particles. Corrosion happens when a surface typically metal is exposed to a gas or liquid chemical (Britannica).

-Lemon Juice: Has the pH of 2.3 and is used to clean pennies and to write secret messages that can only be revealed by heat (Wikipedia).

-Rubbing Alcohol: Used for disinfecting or to soothe the skin. 70% of rubbing alcohol is made from ethanol. It has a bitter taste and a strong smell (wise Geek).

•Hypothesis: I think that peroxide will clean the pennies the best because it is used for disinfecting. Also I think that it will clean best because you hear it sizzling.

•Materials:

-20 corroded pennies

-Rubbing Alcohol

-Peroxide

-Vinegar

-Lemon Juice

-4 containers

-Timer

-Tooth brush (to scrub pennies)

-Pen

-Paper

-Timer

•Procedure:

-Gather all materials needed

-Measure ½ cup of Lemon Juice, Vinegar, Alcohol, Peroxide

-Pour each liquid into 4 small containers

-Put 5 corroded pennies in each container

-Put lid on and shake for 10 seconds

-Set timer for an hour

-Once timer rings scrub each penny thoroughly

-Set back in liquid

-Set timer for an hour

-Pour liquid out and wipe off with paper towel

• Variables

-Independent:

Rubbing Alcohol

Peroxide

Lemon juice

Vinegar:

-Dependent:

Condition of Brush

Shine

Residue on paper towel

Residue in liquid

-Controlled:

½ cup of each liquid

Shaking for 10 seconds

A set time

Wiping off pennies

Liquids in same room temperature

•Results: In PowerPoint /table

•Conclusion: My hypothesis was wrong, peroxide did not clean the pennies the best. Lemon juice cleaned the best.

•Major Observations: Peroxide looked like it was cleaning best because there were bubbles surrounding the pennies.

•Possible Causes of Error: I used the same measuring cup to measure out each liquid. Also I used different containers.

•Further Research: With the results that Lemon juice cleaned the best, we could see if Lemon juice cleaned different kinds of metal. Also we could see if all of the liquids together would clean better than just lemon juice.

•Time Spent: I spent about 18 to 20 hours on this project

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